

## Abstract

A system and method for parallel computation of Discrete Sine and Cosine Transforms. The computing system includes a plurality of interconnected processors and  
5 corresponding local memories. An input signal  $x$  is received, partitioned into  $P$  local vectors  $x_i$ , and distributed to the local memories. The preprocessors may calculate a set of coefficients for use in computing the transform. The processors perform a preprocess in parallel on the input signal  $x$  to generate an intermediate vector  $y$ . The processors then perform a Fast Fourier Transform in parallel on the intermediate vector  $y$ , generating a  
10 second intermediate vector  $a$ . Finally, the processors perform a post-process on the second intermediate vector  $a$ , generating a result vector  $v$ , the Discrete Transform of signal  $x$ . In one embodiment, the method generates the Discrete Sine Transform of the input signal  $x$ . In another embodiment, the method generates the Discrete Cosine Transform of the input signal  $x$ .